



## Yak-19

DATA AS OF 1997 (requires updating, in progress)

Yak-19



Experimental fighter. Designed by A.S. Yakovlev Design Bureau. Development began in 1946. First flight of the Yak-19-I prototype - January 1947 (pilot - S.N. Anokhin), first flight of the Yak-19-II prototype - October 1947. The aircraft was not mass-produced.



Experimental fighter Yak-19 ( <http://www.airwar.ru/> ).

Author: [DIMMI](#)

Created: 23.02.2014 00:18:16

Comments: 1

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## I-270

DATA AS OF 1997 (requires updating, in progress)

I-270 / "Zh" aircraft



Experimental fighter. Developed by the A.I. Mikoyan and M.I. Gurevich Design Bureau using materials and developments on the German Me-263 fighter. First flight - 1946 (pilot - V.N. Yuganov, according to V.B. Shavrov, first flight - summer 1947). Only two examples were built, both crashed during testing.



Experimental fighter I-270 OKB MiG ( <http://crimso.msk.ru/> ).

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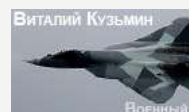
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## Latest comments

### Electronic warfare complex K

PPP Wrote:...After all, Donald Coo has enough RTR systems - he was guaranteed to "write"...

[Big Prison](#) 2017-11-01 18:47

### Electronic warfare complex K

Altimeter Wrote:...If the reason for absence of the first is known, then Voodoo was not bad...

[Bolshoy Prison](#) 2017-11-01 18:28

### Electronic warfare complex K

PPP Wrote:Max Wrote:data on noi use of Khibiny ...There are general rules of counteraction...

[Altimeter](#) 2017-11-01 17:46

### Electronic warfare complex K

Author: [DIMMI](#)

Created: 23.02.2014 00:06:59

Comments: [9](#)[READ THE FULL ARTICLE »](#)

## Yak-15 - FEATHER

DATA AS OF 1997 (requires updating, in progress)

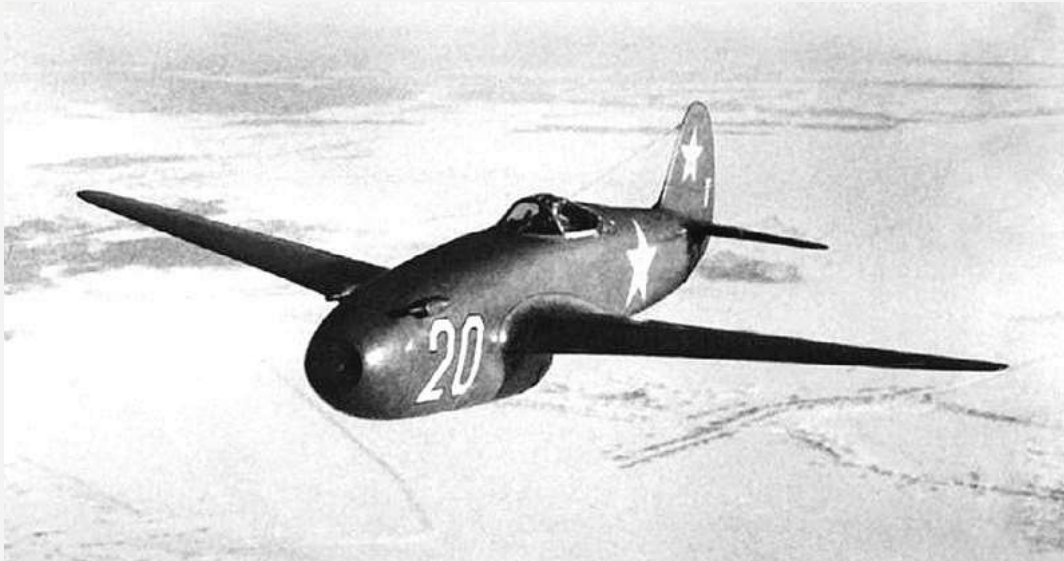
Yak-15 - FEATHER

★★★★

Fighter. Designed by A.S. Yakovlev Design Bureau based on the Yak-3 piston fighter. Initial designation of the project in the design bureau was Yak-RD or Yak-YUMO. The prototype was built by October 1945 with the expectation of entering flight tests by the end of 1945. Ground tests of the aircraft began in October 1945 - engine starts, runs and approaches. A problem was discovered - fuselage overheating from the engine jet, which required modifications to the fuselage to improve its heat protection. On December 1, 1945, a commission chaired by N.A. Kozlov, head of the Quality Control Department of Plant No. 115, examined the materials on the Yak-Yumo aircraft and determined that it had been built in accordance with the drawings and could be transferred for factory testing. Nine days later (December 10, 1945), a report was drawn up stating that the Yak-Yumo had undergone ground tests from December 5 to 10, 1945. During this, four taxiing runs were performed with the tail up, which made it possible to begin flight tests. Before the first flight, the aircraft was transferred to TsAGI for testing in the T-101 full-scale wind tunnel.

The aircraft's first flight took place on April 24, 1946 (pilot - M.I. Ivanov, lead engineer - E.G. Adler) - somewhat later than the first flight of Mikoyan and Gurevich's [MiG-9](#). The second Yak-15 prototype was built in December 1945. The aircraft differed from the first prototype by a slightly larger horizontal tail area. After a series of tests at the Central Airfield, the Yak-15 was sent to TsAGI for testing in the T-101 full-scale wind tunnel.

Serial production began on October 5, 1946, at the Tbilisi Aviation Plant. The first series of 15 aircraft was released in 1947. Aircraft testing was completed in May 1947.



One of the most famous photos of the Yak-15 fighter is a serial Yak-15 from the first series of 15 units, produced in 1946-1947 by the Tbilisi Aviation Plant.

Author: [DIMMI](#)

Created: 17.02.2014 23:22:38

Comments: [6](#)[READ THE FULL ARTICLE »](#)

## Su-9 / Su-11 / Su-13

DATA AS OF 1997 (to be updated, in progress)

Su-9 / aircraft "K"

Su-11 / aircraft "LK" / "KL"

Su-13 / aircraft "KD"

★★★★

A family of experimental fighters designed by P.O. Sukhoi Design Bureau. Development of the Su-9 began in 1944 (Su-11 in 1947). The first flight of the Su-9 prototype was in November 1946. The Su-11 flew in 1947 (first flight - pilot G.M. Shiyonov). The Su-13 was built in 1948, but never flew. The aircraft were never put into serial production and were never accepted into service.



Su-9 fighter during testing, 1946.

And a video-schmideo to boot  
<https://youtu.be/kOcQ3ru4QUE> pa  
 fa

[oldstaryi](#) 2017-10-31 20:43

### Electronic warfare complex K

In principle, so much has been  
 written about Khibiny that, thanks t  
 some, it is not entirely...

[oldstaryi](#) 2017-10-31 20:37

### Electronic warfare complex K

Photo of the piece of iron itself

[Sierra](#) 2016-09-18 16:10

### Electronic warfare complex K

The material, of course, is not  
 entirely appropriate, but it fits in wi  
 the discussion here...

[osankin](#) 2014-09-09 12:05

### Electronic warfare complex K

PPP Wrote: Moreover - you can't  
 explain why they are suppressing  
 Aegis radars at such a low...

[Artist](#) 2014-09-09 00:12

### Electronic warfare complex K

Max Wrote: Ok, thanks for the  
 answer, frankly speaking, not a sin  
 answer to those...

[Artist](#) 2014-09-08 23:43

### Electronic warfare complex K

Max Wrote: data on the non-use o  
 Khibiny ...There are general rules  
 counteracting the means...

[PPP](#) 2014-09-05 18:28

Author: [DIMMI](#)

Created: 21.02.2014 01:18:09

Comments: [8](#)[READ THE FULL ARTICLE ->](#)

## La-150

**DATA AS OF 1997 (requires updating, in progress)****La-150**

★★★

Experimental fighter. The aircraft was developed by the S.A. Lavochkin Design Bureau. The aircraft was developed starting in 1945. The prototype made its first flight in September 1946 (pilot - A.A. Popov).

The aircraft was not submitted for state tests, but was produced in small series at Plant No. 21 (Gorky) for the November parade of 1946. Factory tests were completed in April 1947. The aircraft was never put into service with the USSR Air Force.



Airplane La-150 "parade" series 1946, manufactured by Plant No. 21, Gorky ( <http://propjet.ucoz.ru/> ).

Author: [DIMMI](#)

Created: 20.02.2014 00:36:57

Comments: [2](#)[READ THE FULL ARTICLE ->](#)

## ADCOM United 40 / United 40 block 5

**DATA FOR 2014 (in progress)****ADCOM United 40****ADCOM United 40 block 5**

★★★

Long-endurance UAV. Developed and manufactured by ADCOM (UAE). The first flying prototype of the UAV with partially removed onboard systems was first shown to the public in the UAE at the Douma Air Show in November 2011. The first demonstration of the device outside the UAE took place in August 2013 in Zhukovsky (MAKS-2013). A demonstration device, an analogue of the United 40 UAV, made in a scale of 1:4, made its first flight in 2010. The first flight of the United 40 UAV was planned for December 2011.

In 2012, plans were first announced to purchase the United 40 UAV for the Russian Air Force. In December 2013, it was announced that military tests of the UAV would begin in Russia in February 2014, but on February 10, 2014, the media [reported](#) that the tests were postponed to a later date by decision of the Russian Ministry of Defense.

The UAV received its name in honor of the 40th anniversary of the formation of the UAE, which was celebrated in 2011.



ADCOM United 40 UAV at the Dubai Airshow in November 2011 ( <http://www.adcom-systems.com/> ).

Author: [DIMMI](#)

Created: 10.02.2014 13:05:44

Comments: [2](#)[READ THE FULL ARTICLE ->](#)

## Il-214 / MTS - MRTA / MTA

**DATA FOR 2014 (standard update)****Il-214 / SVTS / MTS - MRTA / MTA (Multi-role Transport Aircraft)**

★★★

Medium military transport aircraft (MMA) / multifunctional transport aircraft (MTA). The Il-214 / MTA project is being developed by the Ilyushin Design Bureau. In 2009, the preliminary design of the aircraft was prepared for defense. On September 9, 2010, HAL and UAC (United Aircraft Corporation) signed a basic agreement on the joint creation of the MTA aircraft (the initial protocol was signed on June 6, 2001). The cost of creating the aircraft is estimated at USD 600 million. The first flight of the MTA at the time of signing the agreement is expected in 2017, serial production is planned to begin in 2019. In Russia, the aircraft is planned to be manufactured at the Irkut Scientific and Production Corporation (Irkutsk).



On May 28, 2012, in Bangalore, HAL and UAC (United Aircraft Corporation) signed a general contract for the design of MTA aircraft, which are planned to be supplied to the Indian Air Force, the Russian Air Force and for export. The production of aircraft in both Russia and India is planned to be organized with the help of the joint Russian-Indian venture Multirole Transport Aircraft Limited (MTAL). It is assumed that the Russian Air Force will accept 100 MTAL aircraft into service, the Indian Air Force will accept 45 aircraft to replace [the An-32](#), and the remaining 60 MTAL will be exported. In total, it is planned to build 205 MTAL aircraft.

The contract for the first stage of aircraft development from MTAL was received by UAC and HAL on October 12, 2012. At the opening of the DefExpo-2014 exhibition on February 6, 2014, it was announced that the release of the first prototype of the aircraft is planned for 2018-2019. In 2019, accordingly, the release of the second prototype is planned and from 2020 it is planned to begin serial production of the aircraft. In total, there are plans to produce about 200 aircraft jointly with India for the Russian Air Force (100 units), India (45 units) and for export ( [source](#) ).



Poster with MTA aircraft at Aero India-2013 exhibition. 10.02.2013 ( <http://livefist.blogspot.ru> ).

Author: [DIMMI](#)

Created: 30.05.2012 15:41:32

Comments: [33](#)

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### BrahMos-M / BrahMos-M (project)

**DATA FOR 2014 (standard update)**

**BrahMos-M / BrahMos-Mini / BrahMos-M rocket**

★★★

Anti-ship cruise missile / cruise missile for firing at ground targets. A smaller-sized modification of the [BrahMos](#) missile for placement on various launch platforms - primarily on aircraft carriers. Development was started by the joint Russian-Indian venture "BrahMos Aerospace Pvt. Ltd." (established on 12.02.1998) according to media [information](#) from February 4, 2014. The first launch of the missile is planned for 2017.



Models of BrahMos and BrahMos-M missiles at the DefExpo-2014 exhibition, 07.02.2014 ( <http://defense-update.com/> ).

Author: [DIMMI](#)

Created: 04.02.2014 23:56:08

Comments: [Z](#)

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## MiG-25R / RB / BM FOXBAT-B, -D, -F

DATA FOR 2012 (standard update)

MiG-25R - FOXBAT-B

MiG-25RB - FOXBAT-C

MiG-25BM - FOXBAT-F

★★★★

High-altitude operational reconnaissance aircraft / attack aircraft / anti-radar attack aircraft. Conceptual search work was carried out by OKB-155 (MiG) and TsAGI in 1958-1960 under the supervision of Ya. I. Seletsky. The decision to create the aircraft was made in 1960. At the pre-draft design stage, three aircraft variants were considered - an interceptor (E-155P), a reconnaissance aircraft (E-155R) and a carrier of attack missiles (E-155N). In May 1960, requirements for the equipment of the reconnaissance aircraft were developed. The development of the prototype of the MiG-25 in its classic form (a twin-fin aircraft with a trapezoidal wing) in the reconnaissance and interceptor variants E-155 was started by OKB-155 Mikoyan and Gurevich (later - MMZ "Zenit") by the Order of the State Committee on Aviation Industry of March 10, 1961, which was issued on the basis of the Resolution of the Council of Ministers of the USSR of February 5, 1961 (February 17, 1961 according to other sources). Chief designer - M.I. Gurevich, later - N.Z. Matyuk, since 1976 the work on the aircraft was supervised by Deputy Chief Designer L.G. Shengelaya. The technical specifications set the task of creating an aircraft with a cruising speed of 2.5-3.0M.

Beginning in March 1961, work was carried out on three versions of the E-155R reconnaissance aircraft with a unified airframe:

- aerial reconnaissance and general radio reconnaissance aircraft (AFR version, provisional name)
- long-range radio reconnaissance aircraft (RLR version, provisional name)
- radar reconnaissance aircraft (RLR version, provisional name)



MiG-25RB, red #48, Baltimore Air Base #7000, Voronezh, August 2011 (photo by Ivan Vukadinov, <http://russianplanes.net/> ).

Author: [DIMMI](#)

Created: 02.08.2010 00:55:32

Comments: [70](#)

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### K-30 system, Kh-30/Kh-33 missiles

#### DATA AS OF 2013 (in progress)

**K-30 system, Kh-30 / Kh-31 / KhB-32 / Kh-33 missiles** Project of a strike aircraft missile system with different types of missiles and the T-4 carrier aircraft (aircraft "100") of the P.O. Sukhoi Design Bureau. The K-30 system included the following types of missiles (at different times): - Kh-30 - anti-ship cruise missile (first version of the system design, 1962); - Kh-31 - long-range cruise missile (first version of the system design, 1962); - KhB-32 - air-launched ballistic missile (first version of the system design, 1962); - Kh-33 - long-range aeroballistic cruise missile (version of the system design, 1963); In January 1962, the T-4 aircraft project with the K-30 strike missile system was approved by the State Committee on Aviation Industry (the competition also included projects by the A.N. Tupolev Design Bureau - the "135" aircraft - and A.S. Yakovlev - the "33" aircraft). On January 27, 1962, in a letter to D.F. Ustinov, the head of the Ministry of Aviation Industry P.V. Dementyev proposed a draft Resolution on the start of full-scale development of the T-4 aircraft in three versions: T-4A - reconnaissance, T-4B - jammer and T-4 - carrier of the K-30 strike system, which was to include the Kh-30 and Kh-31 missiles. The development of the Kh-30 missile and the K-30 system as a whole was planned to be assigned to OKB-51 of P.O. Sukhoi, with the missile scheduled to begin flight tests in the first quarter of 1965 and the start of system tests in the fourth quarter of 1965. At the same time, it was proposed to begin development of the Kh-31 (cruise) and KhB-32 (airborne ballistic) missiles by the Lavochkin Plant Design Bureau (General Designer M.M. Pashinin) according to the technical specifications of the K-30 system (OKB-51). Flight tests of the Kh-31 missile were supposed to begin in the first quarter of 1965, and the preliminary design for the aeroballistic missile was planned to be completed by January 1965. The design of the Kh-30 missile was started in early 1962 under the supervision of N.S. Chernyakov in the P.O. Sukhoi Design Bureau as the main armament of the T-4 aircraft (aircraft "100") of the P.O. Sukhoi Design Bureau. Two versions of the missile with different tail units were developed. A 1:12.5 scale model was made, which was blown through the TsAGI T-113 wind tunnel. In 1963, the development of the Kh-30 missile was discontinued. The groundwork for the Kh-30 missile was used in the development of the Kh-33 missile, which was started in the same 1963. The development of the Kh-33 missile was carried out in OKB-51 by designers I.O. Melts, V.P. Sopin, Yu.V. Troelnikov, V.V. Piskov and E.V. Litarev, headed by N.S. Chernyakov.

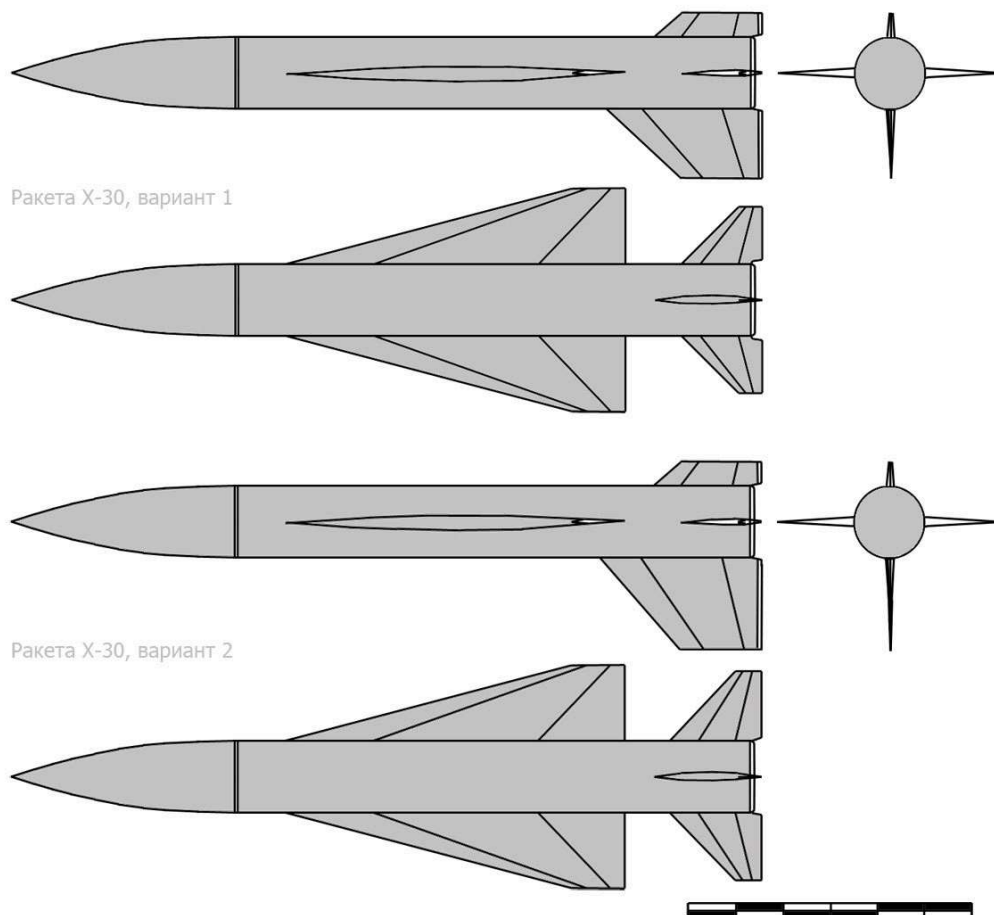
★★★



Models of the Kh-30 or Kh-33 missile under the wing of the T-4 aircraft model of the P.O. Sukhoi Design Bureau, 1966 (<http://forums.airbase.ru> , processed).



<http://militaryrussia.ru> (c) 15.12.2013



Projections of Kh-30 missile variants ( <http://militaryrussia.ru> based on a drawing by Nikolai Gordyukov).

Author: [DIMMI](#)

Created: 19.02.2009 00:11:20

Comments: 4

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## K-27 / R-27 - AA-10 ALAMO

DATA for 2013 (standard replenishment)

K-27 / R-27 / product 470 / 9-A-1101 - AA-10 ALAMO

K-27R / R-27R / product 470-1 / 9-A-1101K - AA-10 ALAMO-A

K-27T / R-27T / product 470-3 / 9-A-1023 - AA-10 ALAMO-B

K-27ER / R-27ER / product 470-1E - AA-10 ALAMO-C

K-27ET / R-27ET / product 470-3E - AA-10 ALAMO-D

R-27P / 9-A-1032 - AA-10 ALAMO-E

R-27EP - AA-10 ALAMO-F

R-27A / 9-A-1103

R-27AE

R-27EM / R-29ME - AA-10 ALAMO-M

★★★★

A family of modular medium- and extended-range air-to-air guided missiles. Development of the K-27 missile was started by the Vypel State Design Bureau (Moscow) in 1972. The missile was developed as a single medium-range missile to arm the prospective MiG-29 and Su-27 fighters. The Sukhoi Design Bureau and the GosNIIAS proposed developing two versions of the missile - a basic version identical in characteristics to the AIM-7R Sparrow missile and intended for the MiG-29, and an "energy" version with an increased range intended for the Su-27. A modular missile design was proposed for the purpose of unification. In late 1973, the medium-range missile concept was discussed at a meeting at the Ministry of Aviation Industry and Trade with the participation of the GosNIIAS, the Sukhoi Design Bureau, the Mikoyan Design Bureau, the Vypel Machine Building Plant, and the Molniya PKPK. Proposals for the concept of creating a modular medium-range missile were officially formalized in the Decision of the MAP, MOP, MRP, MM and the Air Force approved in February 1974. The preliminary design of the missile was conducted on a competitive basis by the Vypel Design Bureau and the Molniya Design Bureau. Preliminary results were summed up at the end of May 1975 - the Vypel Design Bureau won the competition - K-27 / product 470 ( *history - Su-27 fighter ...* ).

The development of the K-27 missile was supervised by the deputy chief designer of the Vypel Design Bureau P.P. Dementyev, the leading designers at different times were V.T. Korsakov, A.V. Kharlamov and I.V. Balovnev. At the stage of the preliminary design, two options for the missile layout were considered - a normal aerodynamic configuration and a "duck" configuration or a missile configuration with a rotating wing of an original shape. GosNIIAS supported the traditional aerodynamic scheme, and TsAGI recommended a scheme with an original rotary wing. It was chosen for design ( *source - Su-27 fighter...* ).



R-27R missile launched from a Bulgarian MiG-29 moments before the UAV was destroyed. The frame was taken by the UAV's video system. Published on 09.12.2013 ( [source](#) ).



R-27R missile on the APU-470 launcher under an Iranian Air Force F-14, published on 07.07.2012 ( <http://www.militaryphotos.net> ).



(C) Anatoly Burtsev (photo ID118223) RussianPlanes.NET  
R-27ER missile or its training modification under the Su-30MKK, side No. 502, white, owned by JSC Sukhoi, Ramenskoye, February 2013 (photo by Anatoly Burtsev, <http://russianplanes.net/id118223> ).





A German Air Force MiG-29 launched an R-27R - AA-10 ALAMO-A missile. 73rd Wing, Laage AB, 10 June 2003 (photo by Michael Ammons, USAF, <http://commons.wikimedia.org> ). R-27R and [R-60M](#)



missiles under the wing of a MiG-29 of the DPRK Air Force, photo no later than 2009 (KCNA, <http://www.afp.com> ).

Author: [DIMMI](#)

Created: 25.01.2009 00:25:25

Comments: [Z](#)

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## K-77 / R-77 - AA-12 ADDER

DATA FOR 2012 (standard update)

Rocket K-77 / R-77 / RVV-AE / AAM-AE - AA-12 ADDER / AMRAAMski

Rocket K-77M / R-77M

Rocket K-77-1 / RVV-SD [RVV-AE-PD](#)

rocket (version with ramjet)

★★★

Medium-range air-to-air missile. Development of a medium-range missile with an active radar homing head and a mass of up to 160-165 kg, similar to the American AIM-120 AMRAAM missile, was started by the decision of the Military-Industrial Complex under the Council of Ministers of the USSR on March 19, 1980. R&D work on the missile was carried out by GosMKB Vypel together with NPO Molniya, GosNIIAS and TsAGI. The development managers were G.A. Sokolovsky and V.A. Pustovoitov. By 2005, the chief designer of the missile was V.G. Bogatsky (GosMKB Vypel). In 1981, a technical proposal for the missile and an addendum to it were prepared. The decree of the Council of Ministers of the USSR which set the R&D work on the creation of the K-77 missile was issued on July 31, 1982. The missile is intended for use against highly maneuverable targets, including air-to-air missiles AIM-120 AMRAAM and AIM-54 "Phoenix" (USA), as well as anti-aircraft missiles of the MIM-104 "Patriot" type (USA).

The creation of the missile control system was started in the mid-1980s by NPO Istok (Fryazino) as part of the work on the Soyuz research and development project to create a new generation radar for fighters. The work was headed by S.I. Rebrov. Together with GosNIIAS, the missile's homing head was integrated into the missile control system, built on a strapdown gyroinertial system with an on-board digital computer. The integration of the onboard digital computer and the autopilot was carried out by the Research Institute of Instrument Engineering under the direction of B.N. Gavrilin.

The first eight ballistic launches of the K-77 missiles were conducted in 1983. Beginning in May 1984, the K-77 missile underwent flight tests from the MiG-29 carrier (serial No. 09-21 - 09-19 according to other data) - by the end of 1984, 18 missile launches were performed without a guidance system. In December 1984, MiG-29 serial Nos. 09-23 and 09-70 joined the test program, and in June and August 1985, respectively, MiG-29 serial Nos. 09-25 and 09-71. In 1984, serial production of the K-77 missile began at the Kiev Artem Plant (Ukraine, production continued until the collapse of the USSR). State tests with launches at La-17 targets and Tu-16 and MiG-21 unmanned target aircraft were conducted with MiG-29 aircraft (No. 09-21, 09-70 and 09-71) from 1988 to 1991. In 1992-1993, the missile underwent military trials. The K-77 missile was officially accepted into service on February 23, 1994. Serial production of K-77 missiles for the needs of the Air Force in Russia was not carried out, and serial production of K-77 missiles for export was carried out by the pilot production of the GosMKB Vypel.

As of 1996, GosMKB Vypel is working on creating modifications with an IR homing head (with trajectory capture), with a combined rocket-ramjet engine (RVV-AE-PD), a version of the missile for use in an SAM (RVV-ZRK). The first mention and projections of the R-77M missile in the press - 1998. The K-77-1 / RVV-SD missile is a version of the K-77 missile using only Russian-made components. Probably, as of 2011, the K-77-1 missile has been accepted into service or is completing the state testing program.



K-77-1/RVV-SD missile at MAKS-2011 (photo by Said Aminov, <http://saidpvo.livejournal.com> ).

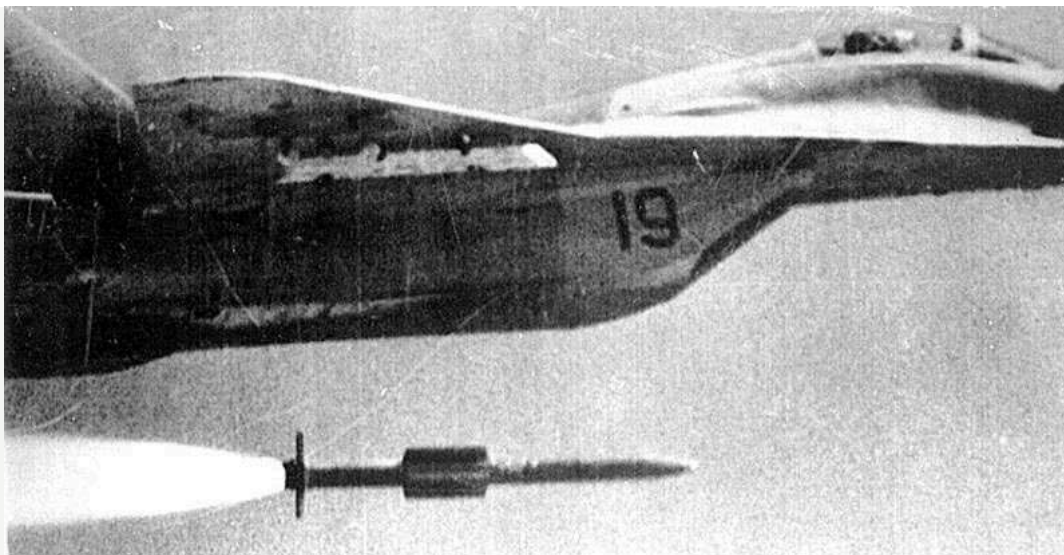


K-77 missile mockup suspended under Su-30MKI fighter, India, 2011 ( <http://forums.eagle.ru> ).



R-77 missiles under the wing of MiG-31M, aircraft no. 057 ( <http://militaryphotos.net> ).





One of the K-77 test launches from MiG-29, aircraft no. 19 ( <http://militaryphotos.net> ).

Author: [DIMMI](#)

Created: 25,01,2009 00:55:22

Comments: 4

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### Tu-204P (project)

**DATA AS OF 2013 (standard replenishment)**

**Tu-204P (project)**



Project of an anti-submarine patrol aircraft. The development of the aircraft was started by the Tupolev Design Bureau on the basis of the Tu-204 passenger aircraft by decision of the Russian Ministry of Defense in 1996 after the termination of the A-40 anti-submarine aircraft development program. Probably, a preliminary design or even a preliminary design of the aircraft was developed. The development of the aircraft and funding were probably terminated in 2000.



Presumably a model of the Tu-204P anti-submarine patrol aircraft, model shop of Tupolev JSC, August 2013 ( <http://onepamop.livejournal.com> ).

Author: [DIMMI](#)

Created: 11,11,2013 15:41:09

Comments: 2

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### Tu-156 / aircraft 156 (project)

**DATA FOR 2012 (standard update)**

**Tu-156 / aircraft 156 (project)**



Airborne early warning and control aircraft (AEW&C). In the late 1960s, it became necessary to detect air targets against the background of the underlying earth's surface. To solve this problem, the development of the Shmel radiotechnical complex with the Grib antenna system was started (NPO Vega-M, chief designer of the radar complex - V.P. Ivanov). In 1969, by the Resolution of the Council of Ministers of the USSR, work began on the creation of the Shmel radar complex with placement on one of the serially produced aircraft. The Tupolev Design Bureau began developing carrier options for the Shmel complex. In 1970, a preliminary design for the AEW&C aircraft was prepared, in which several options were considered - the Tu-142M, Tu-154 and Tu-126. The Tu-142M aircraft, despite the support of this option by the Customer, was rejected due to the difficulty of placing the equipment complex in a narrow fuselage. The Tu-154 did not suit the short flight duration and the need for significant design changes. The use of the Tu-126 was also not possible due to the termination of its serial production and the disposal of all equipment. As a result, the A.N. Tupolev Design Bureau decided to design a new aircraft - a carrier of the AWACS - the "156" aircraft. The design bureau prepared a preliminary design, but due to the Customer's requirement to place

the radio-technical complex on a serially produced aircraft, the choice of carrier was made in favor of the Il-76 and later the А-50 AWACS aircraft was created .



Model of the AWACS aircraft "156" of the Tupolev Design Bureau. JSC "Tupolev", August 2013 ( <http://onepamop.livejournal.com> ).



Model of the AWACS aircraft "156" of the Tupolev Design Bureau ( <http://www.testpilot.ru> ).

Author: [DIMMI](#)

Created: 29.10.2012 22:21:29

Comments: [5](#)

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## Tu-16 - BADGER

DATA FOR 2013 (based on data for 1997, in progress)

Tu-16 / aircraft "88" - BADGER-A	Tu-16KSR - BADGER-G
Tu-16KS - BADGER-B	Tu-16P "Bouquet" - BADGER-H
Tu-16K-10 - BADGER-C	Tu-16P "Yolka" - BADGER-J
Tu-16PM / Tu-16PQ - BADGER-D	Tu-16E "Azalea" - BADGER-K
Tu-16P - BADGER-E	Tu-16P - BADGER-L
Tu-16P - BADGER-F	



Long-range bomber / medium bomber-missile carrier (according to later classification). The aircraft is similar in purpose and capabilities to the B-47 bomber (USA). Development of the aircraft was started by OKB-156 of Andrei Nikolaevich Tupolev in 1949 under the project "aircraft 494" - the fourth aircraft developed in 1949. Lead designer of the Tu-16 theme - D.S. Markov. The project is based on the developments in the projects of twin-engine long-range bombers "86" and "87", work on which was carried out in 1948-1950 ( *see Modifications* ). Based on the project of aircraft 494 in the same 1949, development of the project of aircraft 495 / 494-88 began in two versions - with two and four AL-5, TR-3A and TRDD TR-5 engines. The variant with swept wings, two TR-3A engines pressed against the fuselage, with a tricycle landing gear with the main landing gear retracted into special nacelles was selected for further development.

Resolution of the USSR Council of Ministers No. 2474-974 of June 10, 1950 specified the design and construction of the long-range

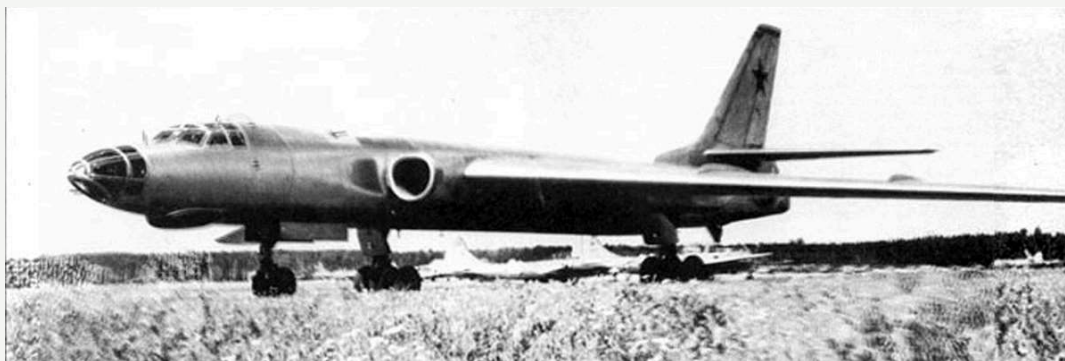


bomber "88" ("aircraft N") with two TR-3F engines with a thrust of 5,000 kg each, with a subsequent transition to the AMRD-03 turbojet engine with a thrust of 8,000 kg each. The resolution provided for the construction of two prototypes of the "88" aircraft for testing. The performance requirements for the new aircraft were issued to the Air Force on 15 June 1950. The Air Force's revised requirements for a high-speed bomber, taking into account engines with a thrust of 8,000 kg, were issued on 11 September 1950. In February 1951, the choice fell on the AM-03 engines, which were under development. In August 1951, testing of the AM-03 engines (series name - AM-3) began. The preliminary design of aircraft "88" was presented to the USSR Air Force in April 1951 and approved along with the aircraft mock-up in July 1951. Preparation for production and construction of the prototype began at Plant No. 156 also in April 1951. On 26 March 1952, the mock-up commission approved the arrangement of equipment and armament of aircraft "88". The first prototype "88/1" was built by the end of 1951.

**Tests** . The first flight of the prototype "88/1" (product N, project 494, "Tu-88") was on April 27, 1952 (crew N.S. Rybko). Due to the lack of speed restrictions at altitudes below 6000 m, the aircraft was overweight. Modifications to the design were made on aircraft "88/12", and aircraft "88/1" began testing. Tests were conducted from November 14, 1952 to March 30, 1953. On March 30, 1953, the aircraft was damaged during an emergency landing. After restoration, the aircraft was used to fine-tune the onboard equipment and the engine installation.



Reconnaissance modification of the Tu-16 ( <http://militaryphotos.net> ).



The second experimental prototype of the Tu-16 - aircraft "88/2" (Sergeev P.N. Tu-16 Missile and bomb strike complex of the Soviet Air Force. // War in the air. No. 26. Kirov, 2000).

Author: [DIMMI](#)

Created: 16.08.2009 15:14:11

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### X-32/9-A-2362

**DATA FOR 2013 (in progress)**

**Missile X-32 / 9-A-2362**

★★★

Air-launched cruise missile / anti-ship missile / anti-radar missile. Development of an updated missile based on and as a replacement for the [Kh-22 missile - AS-4 KITCHEN](#) was started by the Raduga Design Bureau in the 1980s. The missile is similar to the prototype, but is equipped with electronic systems implemented on a new element base.

In the late 1980s, a missile complex with Kh-32 missiles was delivered to the 929th State Flight Test Center (Akhtubinsk) for testing ( [source](#) ).

As of 2004, production of Kh-32 missiles was supposed to begin in 2005. Production was to be deployed at the Dubna Machine-Building Plant. At the latest - in 2007 - production of missiles in Dubna was started ( [source](#) ). According to the contract for the production of the experimental batch of Kh-32 missiles, the Raduga Design Bureau was to produce three experimental articles 9-A-2362 by 25.11.2009, which was not done within the established deadline. It was planned to conduct preliminary ground and flight tests. The tests were supposed to be carried out using the [Tu-22M3M](#) carrier aircraft (Adaptation-45.03M R&D / object 45-03M, [source](#) ). On 27 March 2008, contract No. 83042 was signed with the Raduga State Design Bureau for the Sonetka R&D to conduct experimental models of the 9-A-2362 missiles with the TK-56 warhead on [the Tu-22M3M / 45-03M](#)

carrier by 25.11.2011 . However, the supplement to the technical specifications for equipping the 45-03M object with the 9-A-2362 product with block 56 was only completed in June 2010, which led to the failure to schedule the start of joint testing. On 01.01.2011, due to the expiration of the State Contract of 27.03.2008 and the absence of a decision from the customer to carry out the work, work on the Sonetka

project at JSC GosMKB Raduga was suspended ( [source](#) ). Based on the Resolution of the Council of Ministers of the Russian Federation No. 1080-31 of December 2010 on the State Defense Order for 2011 and its planned period of 2012 and 2013, the Tu-22M aircraft, tail No. 9804 / s / n 4898649, as part of the modernization of the Tu-22M3 fleet, was re-equipped by the experimental production of the A.N. Tupolev Design Bureau (ROC "Potential") for testing air-to-ground missiles 9-A-2362. The aircraft is equipped with special measuring equipment ( [source](#) ). The next stage of testing of the Tu-22M3 aircraft / tail No. 9804 / s / n 4898649 in Ramenskoye with Kh-32 missiles was conducted at the end of July 2013. Several flights were performed, including at least one flight with missile launches.



Presumably, the photo shows the Kh-32/9-A-2362 missile. Test flight of the Tu-22M3 aircraft, board No. 9804, Ramenskoye, summer-fall 2013 (fragment of a photo by Sergei Lysenko, <http://russianplanes.net/id121764> ).



Presumably, the photo shows the Kh-32/9-A-2362 missile. Test flight of the Tu-22M3 aircraft, board No. 9804, Ramenskoye, 26.07.2013 (fragment of a photo by Vitaly Yurtaev, <http://russianplanes.net/id114329> ).





Presumably, the photo shows the Kh-32/9-A-2362 missile. Test flight of the Tu-22M3 aircraft, flight number 9804, Ramenskoye, 26.07.2013 (fragment of photo by Mikhail Polyakov, <http://russianplanes.net> via <http://defence.pk> ).

Author: [DIMMI](#)

Created: 26.07.2013 15:40:22

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## An-140 / An-140-100

### DATA AS OF 2013 (standard replenishment)

**An-140****An-140-100**

★★★

Cargo-passenger aircraft. Development of the aircraft was started by Antonov ASTC (Kiev, Ukraine) in 1993. Chief Designer - Sergey Merenkov (as of 2013 at least). The aircraft is intended to replace the mass-produced An-24 and An-26 cargo-passenger aircraft. In 1994, a decision was made to manufacture An-140 aircraft at the following plants: KSAMC (Kharkov, Ukraine), Aviakor (Samara, Russia) and HESA (Iran). The An-140 made its maiden flight on September 17, 1997. It has been serially produced by the Kharkov Aviation Plant (Kharkov) since 1999 (production of the first serial aircraft by KSAMC).

In 2003, the An-140-100 modification makes its maiden flight in Kyiv (Ukraine). May 28, 2005 - the maiden flight of the aircraft produced by the Samara aircraft plant "Aviakor" (Russia) - An-140 serial No. 05A001. On December 23, 2009, contract No. 329/3/195-EOZ was signed between the Russian Ministry of Defense and the Aviakor aircraft plant for the supply of 1 An-140 aircraft for the Russian Air Force (fulfilled by the delivery of aircraft serial No. 11A002). On April 24, 2011, a second contract was signed for the supply of 9 more aircraft for the Russian Air Force during 2011-2013. Under this contract, the first aircraft made its maiden flight on May 17, 2012 (serial No. 12A015). In addition, at the end of 2011 or in the first half of 2012, another contract was signed for the supply of An-140 aircraft for the Russian Navy aviation - the first (or only?) aircraft under this contract made its maiden flight on November 8, 2012. Thus, in 2012, the Aviakor aircraft plant produced 2 aircraft for the Russian Air Force and Navy by mid-December 2012, although at the beginning of the year the plant announced plans to supply 6 An-140 in 2012.

In a presentation on the aircraft, which was shown at a meeting of the working group of the Ministry of Industry and Trade of Russia on November 19, 2012, the following problems associated with its production were noted:

- lack of streamlined serial production (reasons - outdated machine tools, lack of qualified personnel, standardization of technological processes only by 60%, the current labor intensity of aircraft production is 3.5 times higher than serial production);
- lack of right and possibility to modify the design by the Russian aircraft manufacturer;
- problems with suppliers - monopoly, inflated prices, low resources;
- underdeveloped system of technical maintenance and after-sales support;

As a result, relatively high cost of both production and ownership, long manufacturing period are noted.

At the meeting, measures were proposed to solve the above problems within 3-5 years.

By default, the data of the An-140-100 aircraft.



(C) Vivan755, photo ID 123817

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Factory testing of An-140-100 serial No. 13A009 for the Russian Navy, Samara, photo taken no earlier than 1 and no later than 3 November 2013 (photo - Vivan755, <http://russianplanes.net/id123817> ).



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The second of nine An-140 ordered for the Russian Air Force, registration No. RA-41259, Samara, March 2013 (photo - Vivan755, <http://russianplanes.net/id103951> ).



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The first An-140-100 of the Russian Air Force, board No. RA-41254, Ramenskoye, 12 August 2012 (photo - Mikhail Khokhryakov, <http://russianplanes.net/id84507> ).





An-140-100 Russian Air Force, board No. RA-41254, MAKS-2011, 19.08.2011 (photo by Denis Fedorko, <http://russianplanes.net> ).

Author: [DIMMI](#)

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## Yak-130 - MITTEN

**DATA FOR 2013 (standard update)**

**Yak-130 - MITTEN**



A combat training aircraft. The aircraft was developed by the A.S. Yakovlev Design Bureau, chief designer - Nikolai Dolzhenkov. A competition for the creation of a modern combat training aircraft was announced by the USSR Air Force in the second half of the 1980s. As a result of the competition, two projects were selected for design - Yak-UTS / Yak-130 and MiG-AT. Also participating in the competition were the Sukhoi Design Bureau S-54 and Myasishchev Design Bureau M-200 aircraft. The design began in 1991 and was completed in September 1993. In the same 1993, Aermacchi (Italy) was involved in the project for financial reasons, but at the final stage of development it withdrew from the project due to disagreements. Aermacchi received the design documentation for the airframe and eventually released its own version of the Yak-130 - the Aermacchi M-346 aircraft. In 2000-2001, work was underway to produce design documentation for the Yak-130. On April 10, 2002, the Yak-130 was declared the winner of the competition for a combat training aircraft for the Russian Air Force.

The Yak-130 made its maiden flight on April 25, 1996 in Ramenskoye, piloted by Andrei Sinitsyn. Sometimes the first aircraft is called the Yak-130D - "demonstrator". In 2003, production of two Yak-130 prototypes began. On April 30, 2004, the first Yak-130 prototype produced by the Sokol aircraft plant - the second flying Yak-130 - made its maiden flight. In 2008, the Sokol aircraft plant completed production of four pre-production Yak-130s (serial numbers 00-02 - 00-05). Even before the end of the pre-production batch in November 2007, a preliminary conclusion on the first stage of state tests was signed and the aircraft was recommended for serial production. In April 2009, the first stage of state tests of the Yak-130 with the basic composition of armament was completed. State joint tests of the aircraft were completed in 2009 - the act on the completion of state tests was signed by the Commander-in-Chief of the Russian Air Force Alexander Zelin on December 25, 2009. In 2010, tests of the aircraft with corrections to the State Testing Inspectorate comments were conducted.

In 2008, assembly of the Yak-130 and subsequent serial production of the aircraft began at the Irkutsk Aircraft Plant NPK Irkut. The first serial Yak-130s produced by the Irkutsk Aircraft Plant for the Russian and Algerian Air Forces made their first flights in 2009. Since February 2010, the Yak-130s have been entering service with the Russian Air Force. In the summer of 2011, information appeared about the cessation of Yak-130 production at the Sokol aircraft plant and the complete transfer of production for the Russian Air Force to the Irkut Scientific and Production Corporation. In total, the Sokol aircraft plant produced 12 Yak-130s, not counting the first flying prototype. On December 7, 2011, the Irkut Corporation and the Russian Ministry of Defense signed a contract for the delivery of 55 Yak-130s by the end of 2015.



Yak-130, tail number 131/02, Ramenskoye, 19.08.2013 (photo by Marina Lysceva, <http://fotografersha.livejournal.com> ).



Demonstration Yak-130 in "brand" livery, tail number 02 white, published 07.08.2013 (photo by Vitaly Yurtayev, <http://el-moino.livejournal.com> ).





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Yak-130 tail number 91 red in flight, 2010 (photo by Sergey Krivchikov, <http://russianplanes.net/id110578> ).



Yak-130 tail number 01/130 white (published - 2012, photo by V.Savitsky, <http://www.mil.ru> ).



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Yak-130, No. 134, in Ramenskoye, August 10, 2012 (photo by Yuri Stepanov, <http://russianplanes.net/id83467> ).



The first prototype Yak-130, No. 01, white, 1996 (photo by A. Mikheev, <http://crimso.msk.ru> , processed).

Author: [DIMMI](#)

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### Mi-28N - HAVOC-B (helicopter registry)

Mi-28N Helicopter Registry - HAVOC-B (edition 22.10.2012)

[Article about Mi-28N helicopter - HAVOC-B](#)



(c) Evgeny Volkov <http://id117245> RussianPlanes.NET  
Mi-28N helicopters with white tail numbers 01, 03 and 04 of the Berkuty aerobatic team, Ramenskoye, August 22, 2013 (photo by Evgeny Volkov, <http://russianplanes.net/id117245> ).





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Mi-28N tail number 208 blue reg. № RF-91097 probably produced in 2013, Rostov-on-Don airfield, August 17, 2013 (photo by Oleg Ziminov, <http://russianplanes.net/id116179> ).



Mi-28N serial number 07-01 tail number 26 blue in Rostov on Russian Air Fleet Day, August 19, 2012 (photo by ErikRostovSpotter, <http://aviaforum.ru> ).



Helicopter Mi-28N, side No. 50 yellow, from a batch of helicopters transferred to the Air Force at the 344th Central Aviation and Space Administration airbase on October 8, 2011, Torzhok, Tver Region (photo by Sergey Ablogin, <http://ablogin.ru/>).

Author: [DIMMI](#)

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## K-9 / K-9-155 - AA-4 AWL

### DATA AS OF 2012 (standard replenishment)

**K-9 missile**

**K-9-155 missile - AA-4 AWL**

**K-9M missile**

★★★

Experimental air-to-air missile. The creation of a missile with a radar homing head was assigned by the Resolution of the Council of Ministers of the USSR No. 419-198ss of 16.04.1958 and the Order of the State Committee on Aviation Technology No. 211ss/ov of 17.06.1958. Design Bureau of Plant No. 134 of the State Committee on Aviation Technology, Chief Designer - I.I. Toropov. The creation of the missile guidance system was assigned to KB-1 of the State Committee on Aviation Research. It was planned to submit prototypes of the missiles for joint flight tests in the 2nd quarter of 1960. But in 1959, a decision was made to transfer the development of the K-9 missile to the creators of the carrier aircraft for it - to OKB-155 of Mikoyan and Gurevich (the K-9-155 missile, the E-152 aircraft) and to OKB-51 of P.O. Sukhoi (the K-9-51 missile, the T-37 aircraft). The K-9-155 missile was developed by a design team led by V.G. Korenkov for arming the interception complex with the E-152 carrier.

The missile was intended for all-aspect engagement of air targets. It was assumed that the missile would be part of the automated air target interception complex with the Uragan-5 automated control system. But by the time the missiles were put to the test, the Uragan-5 project had already been closed, and the missiles were finalized and tested as part of the work on the E-152-9 interception system in 1961 with the E-152 aircraft and the Uragan-5B control system.

According to the USSR Council of Ministers Resolution No. 608-293ss of 04.06.1959 and the State Committee on Aviation Industry Order No. 345ss of 26.08.1959, it was planned to produce 20 missiles in four versions for testing - ballistic, software, telemetry, and combat (products 91, 92, 93, and 90, respectively). It was planned to produce 20 "products 91", 5 "products 92", 5 "products 93", and 2 "products 90". Drawings for "products 91" and "92" were submitted for production in mid-1959. By the end of 1959, work on the drawings of the remaining products was completed and the first 6 units of "product 91" were released, and production of "product 92" began. By the end of 1960, 21 units of "product 91", 7 units of "product 92", and 4 units of "product 93" had actually been assembled. The release of the



combat version of the missiles was postponed due to the incompleteness and non-delivery of components through KB-1 (autopilots, power supplies, and seeker heads) and Plant No. 567 (BR-6A telemetry stations). Also, as of 1960, four carrier aircraft were being prepared for testing the complex - E-150, two E-152s, and an E-152A. Only the E-152-2, E-152A and, later, E-152M (with K-9 or K-80R missiles) were intended for flight testing of the K-9 missile.



AA-4 missiles under E-152A (Eyermann K.-H. MiGs. Berlin, 1985, GDR).



E-152-1 fighter with K-9 missiles (from the Cabal archive, <http://militaryphotos.net> ).



E-152A fighter with K-9 missiles ( <http://militaryphotos.net> ).

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